Regulation as country specific (dis-)advantage: Smoking bans and the location of FDI in the tobacco industry

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Acknowledgements

Nigel Driffield gratefully acknowledges support from the Leverhulme Foundation through the award of a Leverhulme fellowship, Chris Jones gratefully acknowledges the support of the British Academy

Bios

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Abstract

This paper seeks to examine the relationship between smoking bans and the propensity of tobacco firms to engage in FDI. Utilising international business theory based on the FSA/CSA matrix, we show that, contrary to what one may expect, that smoking bans at home are an important institutional intervention, reducing the propensity for firms to engage in FDI, even to countries without a ban themselves.

Keywords: Tobacco, FDI, Institutions, Smoking Ban

1. Introduction

The importance of institutions in both the context of international business, and indeed in explaining variations in firm performance has been in the spotlight for some time. Often this is discussed within the context of emerging markets, and how improving institutions leads to firm performance (Cuervo-Cazurra & Dau, 2009); building on the broader seminal analysis of institutional quality by Crawford and Ostrom (1995). This literature essentially argues that institutional quality is a crucial driver of firm performance, and in turn international location decisions (Driffield et al 2014). Cuervo-Cazurra and Ramamurti (2014) extend this by arguing that institutional quality at home, within the context of emerging market multinationals, is an important driver of internationalisation, as firms seek to "escape" poor institutional quality. However, such analysis tends to rely on cross country assessments of institutional quality in order to construct an index, which can then be used to explain the location decision. We seek, through a unique lens, to extend this literature in examining the role of a specific institutional intervention - the imposition of a smoking ban, and the impact that they have on the internationalisation of tobacco firms. Our point of interest is foreign direct investment (FDI) in the tobacco sector, which is to say, at the firm level, the acquisition or creation of income generating assets by a firm resident in one country, but investing abroad.[1]

In itself, the continuing regulation and government intervention in this sector has received widespread comment over a number of years, and from a variety of perspectives.

[1] See for example http://www.oecd.org/daf/inv/investmentstatisticsandanalysis/40193734.pdf

The exposure of second-hand smoke on public health has become a major policy concern for health officials across the world. The World Health Organisation estimates that over six million people a year die from smoking related illnesses, and emphasise the role that government interventions can play in countering this[2]. Consequently, governments have introduced rules, regulations and laws banning smoking in various public places. Not without controversy, further impetus was given in 2003 when the World Health Organization's Framework Convention on Tobacco Control (FCTC) compelled signatories to further enact comprehensive smoking bans. By 2012, 176 countries had become party to the convention.

Typically, this literature has relied on cross country estimates of institutions or other cultural or geographic phenomena. As Teegan (2003) points out, most institutions are national, and provide the setting by which private agents interact. Our approach therefore seeks to extend our understanding of the importance of regulation within the tobacco industry. We use an identifier of variation in national governance structures: the existence, or otherwise, of a smoking ban, and employ this, alongside the imposition of excise duty, in the context of a set of firms in a relatively homogeneous industry. Focussing on a specific sector, we seek to develop the literature on institutions developed from North (1990) and applied to firm internationalisation (Hutzschenreuter, Kleindienst, and Lange, 2014).

The tobacco industry and its location decisions offer a particularly interesting subject in this context. The industry is subject to a wide range and ever tightening set of regulatory and policy controls, from trade restrictions and anti-smuggling interventions that also hinder intra-firm trade (Gillespie, 2003), advertising bans (Saffer & Chaloupka, 2000), sales restrictions (Stead & Lancaster, 2008), and more recently smoking bans in public places (Longo, Johnson, Kruse, Brownson, & Hewett, 2001). Indeed there has been an assertion for some time that tobacco firms are responding to smoking bans, and indeed a more general decline in sales in their traditional developed country markets by seeking new markets in the developing world (Gilmore & McKee, 2004). Equally, informal institutions, voluntary codes and the ethics of the industry have always taken second place to economic considerations, including tax revenues, and it is only recently that formal institutions have had a significant impact in the form of the banning of smoking in public places.[3] Thus our analysis builds on Hillier, Pindado, de Queiroz, and de la Torre (2011) and sees smoking bans as the key

[2] http://www.who.int/gho/tobacco/en/

[3] For an example of recent deliberations on this, see details of the World Health Organization meeting in October 2014, available at: http://www.who.int/mediacentre/news/releases/2014/cop6-tobacco-control/en/.

institution in this sector which varies across countries, both in terms of legislation and enforcement. Further, we compare the imposition of a smoking ban with the imposition of excise duties on tobacco, in exploring the impact of the two main interventions designed to deter smoking. Within the context of international business, the industry offers an additional advantage in terms of isolating the effects of intervention on internationalisation. The growing of tobacco typically occurs outside of the large firms, who have no need to engage in resource seeking FDI[4]. Traditionally, international production has been strongly linked to local sales and local branding, with very low levels of what might be termed efficiency seeking FDI. As such, FDI in this sector is of a market seeking nature.

Where IB theory has been applied to problems such as this, the analysis has essentially applied Dunning's eclectic paradigm to the issue of how best to lever firm specific advantages, such as a brand or a particular technology, into new markets. It is likely that one would simply observe exporting behaviour, followed by market seeking FDI once potential foreign sales reach a given scale. However, we argue that government intervention in this industry may be so pervasive, and (for very good reasons) so significant to the operations of the firm, that the lack of institutional intervention (i.e. the lack of a smoking ban) in the firm's home market equates to a source of country-specific advantage (CSA) over firms from other countries with high degrees of regulation or intervention. We therefore seek to link our firm level measures of firm performance, that are hypothesised to be positively related to internationalisation, to interventions designed to inhibit firm performance.

In order to investigate this phenomenon, we utilise a database that allows us to not only identify all instances of FDI in this sector for the period 1997–2009, but also to link directly parent and subsidiary information at the firm level. The major insight of this paper is that smoking bans, rather than prompting the relocation of firms, act as an institutional constraint on internationalisation. It would appear therefore that FDI in this sector appears to be more prevalent from countries without smoking bans. Thus smoking bans at home can be seen as a major source of *country specific dis-advantage* (CSA) that impacts upon firm strategy.

[4] See for example http://www.bat.com/farmers who state that they purchase from over one hundred thousand contracted farmers, or http://www.cdc.gov/tobacco/data_statistics/fact_sheets/economics/econ_facts/ who outline the structure of the industry in the US.

Whilst we argue therefore that regulation, or in this case the lack of it, can be a source of CSA for firms in this sector, we extend our analysis further. We go on to argue that the host and home dimensions interact with each other. Contrary to the common conception, which has argued that firms go abroad as the demand for tobacco at home declines, our results suggest that tobacco firms are more likely to invest in countries without a smoking ban if there is a lack of a smoking ban at home. This, we attribute to the impact that a smoking ban has on the resources available to facilitate internationalization. We subsequently explore this in terms of the interactions between firm specific and country specific advantages, both at home and abroad, that drive internationalisation. Following this we go on to discuss the policy aspects of our findings within the dominant IB frameworks. Given the fact that a majority of countries without tobacco controls tend to have low levels of human development (see Table A1), this has severe ramifications for health-care policy in the poorest parts of the world. It is notable for example that India recently banned FDI in the tobacco sector, and there is pressure for governments in developing countries to provide better education on the health risks associated with smoking, and more regulation on advertising. This paper proceeds as follows. Section 2 introduces the theoretical framework on which our study is based, linking the theoretical basis of studies on FDI with our other theoretical lens of institutional theory. Section 3 develops the empirical model, and presents the data. The remaining sections are devoted to a discussion of our results and the conclusion which discusses policy.

2. Theoretical framework

The stylised literature on FDI by multinational enterprises (MNEs) has at its basis the ownership–location–internalisation (OLI) framework of Dunning (1979, 1988). The basic proposition of the OLI framework continues to be valid in the sense that MNEs expand into other countries and continents to take advantage of local resources and by leveraging their own unique capabilities (Luo & Tung, 2007). Rugman (1981, 1985, 2005) divides the three components of the Eclectic Paradigm into firm-specific advantages (FSAs) and country specific advantages (CSAs). Our approach is to analyse the changes in international production in the tobacco industry, using the FSA/CSA framework of Rugman (1981), which in Rugman (2010) he juxtaposes with the OLI approach of Dunning (1979) in terms of exploring FDI in the CSA/FSA setting from the perspective of the host country as well as the source country.

Rugman (2010) builds on the overlap between FSA and the desire of the firm to internalise its internationalisation strategy, based on transaction cost considerations by considering what he terms "Hymer-type" advantages (Hymer 1960), or in this context Dunnings ownership advantage. These are the FSAs that exist at the firm level, and in our setting facilitate internationalisation, through brands, marketing expertise and potentially product quality. This firm level analysis then has to be mapped onto the CSA/FSA matrix, with respect to the home as well as host country (Rugman 2010)[5].

Of perhaps more relevance to the issue at hand here is the interaction between location advantage and Rugman's use of the term CSA. Extending Rugman's (2010) analysis to the home country, we argue that the imposition of a smoking ban is a key deterrent to FDI in this sector from the perspective of the host country, but equally acts to reduce the likelihood of FDI from the perspective of the home country. This therefore builds on the related analysis of Hennart (2009), who extends the traditional internalization analysis to the interaction between not only the firm's FSAs, but also the complementary resources available to the firm from both its home and potential host location. Within the context of the tobacco industry, we see intervention at home, and abroad, as crucial resources for the firm, interacted, as Hennart (2009) suggests, with their own FSAs.

2.1. Regulation and country-specific disadvantage

The analysis that we apply here is the standard approach to country specific and firm specific advantage (Rugman 1981). Country specific advantage is typically analysed in terms of market efficiency, institutions, quality of goods and capital markets, and resources including natural resources and labour. In this context institutional quality is seen as a key country specific advantage, facilitating transactions and reducing risk (Cuervo-Cazurra & Dau, 2009). Our key institution here is the attitude of government and society to tobacco, expressed through both formal and informal institutions, and the extent to which this can impact on location choice. Abdi and Aulakh (2012) summarise the problem elegantly, arguing that firms interact with their institutional environment through norms that are established on the basis of how well firms understand their environment (Dunning & Lundan, 2008; Xu & Shenkar, 2002).

[5] This is a similar approach to that which explores the distinction between emerging market multinationals and MNEs from the west, with FDI by the latter explained by home country CSAs rather than FSAs in the form of ownership advantages, see for example Cuervo-Cazurra and Ramamurti (2014)

We argue that in this setting, the *lack* of a smoking ban in a firm's home country provides what may be termed a country specific advantage (CSA) for tobacco firms, to facilitate and finance international expansion through FDI. Because the imposition of a smoking ban runs counter to the interests of the tobacco industry, it acts as an important institutional constraint on firm behaviour. It can therefore be seen as a source of home country-specific disadvantage. This regulation or intervention impinges to such an extent on the market seeking motivation for firms to internationalise, perhaps through a combination of reduced resources to fund FDI, but perhaps also the fear of adverse criticism (Neville *et. al*, 2005), that the propensity to internationalise is reduced. Here, one can view the institutional intervention (the ban) as a proxy for a more general anti-smoking stance among at least a significant proportion of the population (if smoking bans were too politically unpopular they would not be introduced). Thus, as well as impacting directly on the consumption of the product, smoking bans can also be seen as indicators of more long term changes in demand.

Additionally, one can also consider the imposition of excise duty in a similar vein. Excise taxes have historically been the most common weapon used by governments in developed economies to combat cigarette consumption. Standard Ramsey rule tax analysis suggests that goods with a low elasticity of demand should be taxed due to the minimal impact upon production and consumption. Tobacco is an addictive product and the user response to a price change is likely to be minimal. In this case, although governments may wish to reduce tobacco consumption to alleviate health pressures, they also get the added benefit of raising revenue. In contrast, a tobacco ban only impacts on the former in direct contrast to the latter. This suggests that although tobacco bans and the use of excise taxes may be seen in a similar light, the effect of a ban is potentially more direct.

Additionally, smoking bans can also be viewed as an indicator of public opinion regarding the health and ethical issues around smoking. This is important in this context because institutions refer not only to legal entities, but to the embeddedness of cultural norms and informal institutions. As such, while firms whose home country has implemented smoking bans may seek new outlets in countries without bans, they are more likely to face criticism at home (Neville *et. al*., 2005). This leads to our first hypothesis:

H1: Interventions to reduce smoking at home are a source of country-specific disadvantage, leading to a reduction in the propensity of such firms to engage in FDI.

Building upon this hypothesis, our analysis then turns to exploring the location of FDI, and the importance of government intervention in the market at home. The evidence suggests that developing countries or those with low human development are less likely to have smoking bans, and much less likely to enforce them than richer countries, presenting an opportunity for tobacco firms. The list of potential host countries without smoking bans in 2009 includes much of Africa, South East Asia and the former Soviet Union (see Table A1 in Appendix A). These are mainly developing countries where the health risks associated with smoking are less widely known.[6] Equally, tobacco markets in these countries are characterised by low levels of enforcement on controls, such as the sale of cigarettes to minors (Frieden, 2005). Market seeking FDI in this sector may therefore be drawn to such locations, and one could employ an argument similar to that concerning environmental regulation that developing countries' governments may be less selective in terms of the type of FDI they can attract, welcoming the employment and investment.

One can refine this argument further by building on the importance of institutions and interventions. Drawing on Williamson (2000), we view institutions as a hierarchy ordered according to the frequency of change and the corresponding degree of applicability of economising behaviour. Both public governance frameworks and private governance structures affect decisions of economic actors most directly, including firms' choices over resource allocation, which also result in performance outcomes.

We argue that smoking controls represent an important institutional construct that in turn is directly targeted at reducing the demand for the product and therefore in turn designed to impact on firm performance. This offers a solution to one of the ambiguities identified by Cuervo-Cazurra & Dau, (2009), in that the broader measures of institutional quality can represent composite effects with opposite signs[7]. Smoking bans arise through the democratic process; they are often in manifestos at elections, or subject to referenda. As such, smoking bans are not merely indicative of social norms in a country, but their enforcement is an indicator of institutional and regulatory quality. Smoking bans are therefore an indication of public opinion regarding the health and ethical issues around smoking. This is important in this context because institutions refer not only to legal entities, but to embeddedness of

[6] For further discussion on these issues see World Health Organization (2003).

[7] Cuervo-Cazurra & Dau, (2009) cite for example improvements in competition policy. On the one hand, they may be expected to improve market efficiency and therefore firm performance, through a more efficient allocation of resources. At the same time, this is likely to cause a reduction in performance of hitherto dominant firms.

cultural norms and informal institutions (Wildavsky, 1987). As such, smoking bans, and the extent to which they are adhered to, are not merely legal entities, but reflect much wider social norms. In turn, embeddedness affects the formal constitutional rules: these reflect general criteria according to which the legal order is built, especially determining how the given systems score along the scale defined by the rule of law. As such, while firms whose home country has implemented smoking bans may seek new outlets in countries without bans, they are more likely to face criticism at home, especially if they seek to exploit markets in developing countries.

This suggests that not only will firms who are located in countries without tobacco bans have a greater propensity to do FDI – but they are also more likely to be attracted to countries that themselves lack tobacco controls. This leads to our second hypothesis:

H2: Firms from countries without smoking bans are more likely to engage in FDI in countries without smoking bans.

2.2. Firm-specific advantages and internationalisation

Thus far, we have explored institutions as sources of country specific advantage, from the perspective of both host and home countries. We now turn our attention to the importance of FSAs in explaining this relationship. The key indicators of firm specific advantage in this context are a vector of variables, encompassing both the ability of the firm to internationalise, in terms of what Rugman refers to as "Hymer advantages", and the ability to finance such internationalisation. Our initial focus therefore is on a firm sales, cash flow, and intangible assets. These are therefore collected from the data. In addition, to capture the importance of managerial assets Johnson, Schnatterly, & Hill, (2013), and Lester, Hillman, Zardkoohi, & Cannella, (2008) for example consider board size, within applications of the knowledge capital model. They argue that, independent of firm size, board size is a proxy for managerial capacity, and combined experience. As such it is positively associated with the ability to coordinate international activities, and to carry out successful FDI projects.

The location for activity is most likely to be in developing countries with low human development and weak institutions. Because of this, knowledge capital is of increasing importance and this resource base can be obtained by a well-stocked board of directors and non-executive directors potentially with political connections. Here we borrow from the

resource based view of the firm (Hillman & Dalziel, 2003) and argue that boards of directors constitute key knowledge capital for the firm, and as such increase both the drive for internationalisation, and also the capacity to successfully carry it out (Calabro et al., 2013). This is a similar argument to that made in the context of the knowledge capital model of the firm, that a significant constraint on firm development and internationalisation is human capital and management experience at the strategic level of the company, with director level resources being a key driver of this. Extending this, from a company corporate social responsibility perspective (CSR) a large number of directors are more likely to push the firm's strategy towards the firm's core economic responsibilities (Carroll, 1979, 1991), rather than a focus on its social objectives. Thus this knowledge capital not only adds to the firm specific advantage, facilitating FDI, but also reinforces the firm's economic responsibilities. This leads to our final hypothesis:

H3: FSAs remain key drivers of internationalisation in the tobacco industry, even where institutions and regulation dominates in the sector.

3. Empirical model

We begin our analysis with a model that analyses the tobacco firm's FDI decision. Building on Driffield et al. (2013), theoretically the probability of a firm entering a location is determined by expectations of future profits (Π^e). In equation 1, T is the expected life of the investment, and r is the discount rate.

$$\text{Prob(FDI)} = \phi_1 \left[\sum_{p=0}^{T} (1/1+r)^{p} \Pi_{t+p}^{e} \right] \quad (1)$$

This is clearly unobservable, but this model can be re-written as a function of a vector of firm and home country characteristics such that

$$\sum_{p=0}^{T} (1/1+r)^{p} \Pi_{t+p}^{e} = (\phi_{ij}, \theta_j) \quad (2)$$

Where ϕ_{ij} is a vector of firm level effects and θ_j is a vector of home country effects (home country-specific disadvantage). In this paper the home country effect is simply whether the parent firm's country of origin has smoking ban legislation. The appropriate estimation technique used is a probit model. Probit models are ideal for studying data with an

independent variable which is binomially distributed. One can express probit models in terms of the event probability.

$$Prob(FDI = 1) = \int_{-\infty}^{\mathbf{x}'\beta} \phi(t)dt = \Phi(\mathbf{x}'\boldsymbol{\beta}) \quad (3)$$

Where Φ is the standard normal cumulative distribution function. The probit model is essentially a linear regression of the Z score of the event probability on the dependent variable (FDI). To interpret the coefficient estimates, therefore, researchers generally look at the estimated signs of the regression coefficients or calculate the marginal effects.[8] Equation 3 translates into equation 4 a model which seeks to explain variations in the propensity of firms to engage in FDI.

$$FDI_{it} = \beta_0 + \beta_1 Sales + \beta_2 Sales^2 + \beta_3 Age + \beta_2 Age^2 + \beta_3 freecashflow + \sum_{j=1}^{3} \delta_j FSA_{jit} + \theta_k Tobacco\_Regulation_{kit} + e_{it} \quad (4)$$

Where FDI_{it} by firm *i* at time *t* equals 1 if a tobacco company undertakes foreign direct investment in time t.[9] The model allows us to test our theoretical hypotheses based on Rugman's (1981) FSA/CSA matrix. The variable *Tobacco Regulation k=1, 2* is our institutional measure and is either: (1) the imposition of a smoking ban (*No_Ban_Home*); or (2) a proxy for the home excise duty rate (*Tobacco Tax*). The former is a dummy variable that equals 1 if a firm's home country of origin has no smoking ban legislation, whilst the latter is measured as a percentage. We can therefore formally test **H1**. By observing a positive coefficient for θ_1 when NO_BAN_HOME is included we can say that smoking bans at home act as a country-specific institutional constraint on the firm's internationalisation strategy. Conversely, if we include the tobacco tax instead of the dummy, a negative coefficient for θ_2 suggests that higher excise duties also act as an important institutional constraint.

As controls, we also include variables that typically operationalise internationalisation theory (see Bhaumik et al. 2010). By including Sales and Sales squared we can determine whether FDI is driven by a non-linear relationship in firm size, such that the largest firms do FDI. In addition, firm age has often been linked to FDI propensity (Driffield et al 2013)

[8] For more information on probit models see Liao (1994).
[9] FDI is observed if the tobacco firm has overseas subsidiaries.

though here it may also capture the fact that more established firms are more entrenched in the tobacco industry, with higher sunk costs and is therefore more likely to seek new markets through FDI. Furthermore, we also include *free cash flow*, following Baker, Foley, and Wurgler, (2008). This is defined as the cash flow available to the firm after its commitments needed to maintain its existing asset base.

In order to test **H3,** the vector **FSA** includes a measure of embedded knowledge (the ratio of intangible assets to total assets of the firm). This measure is that typically employed with firm level financial data (see, for example, Braunerhjelm, 1996, Driffield et al 2013) as a measure of technological or marketing based firm specific advantage[10]. Finally, we also include measures of *Knowledge Capital* in this vector*:* (1) the number of directors as a measure of managerial resources and (2) the concentration of ownership (Herfindahl). The inclusion of the number of directors has been linked to FDI in terms of them providing more expertise, especially in terms of developing new markets, while Bhaumik et al. (2010) link ownership concentration to FDI decisions, and Driffield et al. (2013) to controversial or risky foreign investments.

We then augment the model in order to test **H2** by examining specifically the propensity of firms to invest in countries without a smoking ban. This involves replicating equation 4 but with the dependent variable redefined to include positive observations (coded 1) when firms undertake FDI in a country without a smoking ban. We therefore rename the dependent variable "FDI in No Ban". This means that an estimated positive coefficient for β_1 (i.e. when we include the No_Ban_Home dummy) suggests that tobacco firms from countries without smoking bans are more likely to do FDI in countries without smoking bans.

4. Data

The data consist of the population of tobacco firms, or firms who report tobacco as a significant activity in the ORBIS firm-level dataset provided by Bureau van Dijk. This provides information on 141 firms, 53 of whom engage in FDI, and 26 who invest in countries without a smoking ban. Thus we have an unbalanced panel of firms consisting of 912 observations across the time period 1997–2009. Descriptive statistics and the correlation matrix for each variable are provided in Tables A2 and A4. All monetary values are deflated to remove inflation and logarithms are taken so that the estimated coefficients are elasticities.

[10] Intangible assets include the valuations of brands, trademarks, amortised R&D and patents

In order to create a variable that captures the concentration of ownership we download each shareholder's percentage of ownership and then construct a Herfindahl index using the sum of squared ownership shares.[11].

We identify FDI if firm has at least a 10 percent ownership stake in an overseas subsidiary, involved in the production or distribution of tobacco. This we see as a proxy for market seeking FDI, the desire to "get nearer to the customer". Therefore, for the first specification, the dependent variable (FDI) is a dummy equal to 1 if the firm has a subsidiary abroad and 0 otherwise. For the second specification, the dependent variable (FDI in No Ban) is again a dummy and equals 1 if the firm has at least one subsidiary in a country without a smoking ban and 0 otherwise. Finally, the variable used to test hypotheses **H1** and **H2** (No_Ban_Home) is a dummy variable that equals 1 if a firm's country of origin is in a location without a smoking ban and 0 otherwise.

4.1. Data on smoking bans & tobacco taxes

The data on smoking bans are obtained from chartsbin.com, which constructs an index from the World Health Organizations *WHO report on the global tobacco epidemic* (2008) and from the American Cancer Society and World Lung Foundation's *Tobacco Atlas* (2009).[12] Chartsbin.com classifies countries according to six categories, as defined in Table 1.

Table 1 here

In order to construct the dummy variables outlined above we combine definitions 1–5 and classify those firms as coming from countries with smoking ban legislation, whereas firms from countries that fulfil the sixth definition are those from "no ban" countries. Additionally, we use exactly the same approach in order to determine whether a firm's subsidiaries are located in countries without smoking bans. Table A1 in Appendix A identifies 93 countries in the world that, according to chartsbin.com in 2009, had no smoking bans.[13] For convenience we include the 2009 Human Development Index ranking for each country and it is clear that the majority of countries have low or medium human development.

[11] The Herfindahl of ownership concentration is the sum of each shareholder's ownership percentage squared. We normalise this measure so that it lies between 0 and 1 with 1 representing a firm with a sole owner.
[12] The ChartsBin collector team also use the following source for the Kazakh data: AFP, 2009.
[13] We acknowledge that during and after 2009, tobacco controls were being introduced in a number of countries that are classified as countries without a smoking ban, e.g. Denmark.

Additional details about the data can be seen in Table 2 which describes parent firm coverage. As can be seen, the 141 parent firms span 20 countries. Out of these 20 countries 6 of them had an absence of smoking bans in 2009: (1) China; (2) Croatia; (3) Czech Republic; (4) Greece; (5) Japan; and (6) Poland. In total, 24 firms come from China; 19 are from Bulgaria; and 17 are from Germany, whereas 7 come from the United States and 2 come from the United Kingdom. Interestingly, none of the parent firms are located in a country that is classified by the United Nations as having low human development. The data also include the world's largest international tobacco firms: China National Tobacco; Philip Morris International Inc.; Japan Tobacco International; British American Tobacco; and Imperial Tobacco Group. Unsurprisingly, all of these firms have subsidiaries in "no ban" countries.

Table 2 here

The data on Excise duties[14] is obtained from the World Health Organisation and is equal to the tax on the most sold brand of cigarettes as a percentage of prices in 2008. Table 2 reports the data for the home countries included in our analysis. As can be seen there is some evidence to suggest that low tax rates are associated with limited ban legislation but this is not always the case. Both Poland and the Czech Republic had minimal ban legislation in 2009 but very high excise tax rates.

5. Results

The results for the baseline are presented in Table 3. Here the dependent variable is the FDI variable discussed above. This model works well, with a high proportion of correct predictions, with no bias in the number of type one or type two errors. This overall confirms our approach based on Rugman's FSA/CSA matrix.

Table 3 here

We find clear support for **H1**, in that interventions designed to reduce smoking also reduce the likelihood of FDI. Firms from countries *without* a smoking ban are 7.6% more likely to carry out FDI. This suggests that the lack of a smoking ban at home is more likely to drive FDI, such that in this sector the lack of a smoking ban can be seen as a country-specific asset. In addition, the coefficient for the excise duty is negative again indicating that

[14] See http://apps.who.int/gho/data/view.main.TOB_32800

intervention mitigates internationalisation, though the effect is much weaker. Even a doubling of excise duty would only lead to a reduction in the propensity to internationalise of 0.2%.

There is clear support for **H3** in line with the large literature that seeks to model FDI flows with reference to either the knowledge capital model, or the resource based view of the firm. Managerial capacity is positively associated with FDI, as are sales, and in most cases cash flow. The other firm level variables including sales and age are also linked with greater FDI intensity. In all cases, while the coefficients on sales and sales-squared point to a nonlinear relationship between size and internationalisation, the turning points are around the 15th percentile in the distribution, such that for most firms the probability of internationalisation increases with firm size. Interestingly, the lower the value of free cash, after controlling for size, the greater the propensity for firms to engage in FDI. This is strongly suggestive of market seeking FDI, as firms seek to bolster falling net revenue by seeking new markets.

Typically, the literature that focusses on what may be termed controversial investments finds a positive effect of ownership concentration. Here however, such investment represents the core business for the firm as opposed to more peripheral decisions of whether to choose between two locations, or whether to diversify into potentially profitable but perhaps socially unpopular activities. Interestingly therefore, Dispersed ownership does not influence what in other circumstances may be considered a controversial investment or attract adverse comment in the press.[15]

Turning now to hypothesis 2, this requires a more finely grained analysis, concerning FDI in "no ban" countries. The most striking result in Table 4 is the confirmation of **H2** that firms from countries without a smoking ban are more likely to invest in other non-ban countries. The marginal effect of 0.536 suggests that the magnitude of this is over 50%. This provides clear evidence that "institutions matter"; where a ban does not exist in the home country, firms are more likely to engage in FDI to other countries without a smoking ban. Despite pressure from falling receipts in countries with smoking bans it is not tobacco firms from ban countries that are taking the lead in FDI in non-ban countries to meet their economic responsibilities (Carroll, 1979; 1991). This suggests that viewing FDI in the

[15] In practice, such moderating effects occur through pressure groups or activists purchasing shares in such companies in order to pressure managers into certain decisions. We know of no examples of, for example, cancer or health charities investing in tobacco firms.

tobacco industry through the lens of institution theory is correct. The prevailing national norms and values vis-à-vis tobacco within the host country, proxied here via smoking bans, do appear to constrain the FDI activity of tobacco firms and thus act as a source of country-specific disadvantage. Thus national policy appears to have made firms situated in countries with smoking bans better corporate citizens (Carroll, 1998). Over time, therefore, firms from countries without a smoking ban will become more important, especially in the developing world, as countries from the developing world are less likely to introduce smoking bans.

Interestingly, the effect of increasing excise duty has a similar, but smaller effect, in that counties with higher excise duty (and therefore greater discouragement for smoking), have lower incidence of outward FDI in this sector. Taken together, in conjunction with the effect of sales, the results suggest that in countries where the demand for tobacco is falling, then a smoking ban hastens this process, and reduces still further the capacity of firms from that country to carry out FDI. Alternatively, where a firm's demand is increasing, then a ban dampens the extent to which this growth leads to internationalisation.

Table 4 here

Robustness Checks

As a robustness check, we also estimated the model using not sales but the change in sales, to allow for a reduction in sales in this setting to drive internationalisation. The results are suggestive of this, and all other findings are robust to this specification, reported in appendix A3.

In addition, we were concerned that one could argue that smoking bans are potentially endogenously derived within a model of internationalisation. For example, one may argue that a large firm, potentially employing a large number of people in a less well-off region, may threaten to go offshore if a ban comes in, and therefore be able to prevent a ban from being introduced. We therefore test this using a standard test for endogeneity and report the result in table 3[16].

[16] The Smith-Blundell test is a likelihood ratio test for endogeneity. As with all such tests, the key problem is to find an instrument, in our case something that is correlated with the potential smoking ban but not correlated with internationalisation. We used various institutional measures, such as corruption, law and order and employment at home (on the basis that the more employment a firm has had home the more lobby power it may have). In all cases we do not reject the null hypothesis of the ban variable being exogenous. The result reported relates to the use of law and order as an instrument, which generated the lowest p value.

6. Conclusion

The world health organisation estimates that over 6 million people every year die from smoking related illnesses. These figures are falling in the developed world, but continue to rise in developing countries. Our results highlight the role that smoking bans in developed countries can play in seeking to reduce these figures. Equally, in 2015 when the UK government announced the intention to move to plain packaging for tobacco, independent estimates placed the value of the intellectual property associated with the main UK brands at £20 billion[17]. This emphasises, albeit in an atypical industry, the impact that taxation, interventions and institutional quality can have on firm performance and internationalisation.

Taken together, our results highlight both some specific policy aspects of the regulation of the global tobacco industry, as well as some more general points for the study of international business. Firstly, that the imposition of a smoking ban acts as an institutional constraint on a tobacco firm's internationalisation strategy thus acting as a source of country-specific disadvantage. Several international bodies such as the World Health Organization, UNCTAD and UNIDO are concerned with the proliferation of the tobacco industry internationally, and our results highlight the role that domestic policy can have in reducing this. Hitherto it has been suggested that first world smoking bans are essentially unilateral actions that will lead to internationalisation of firms, but our results show that this is not the case. Rather, our analysis links host and home country institutions, firm level governance and ownership structures, and CSR through the matrix of FSA/CSA to firm level FDI decisions.

Focussing on the tobacco industry, we have shown that the domestic regulatory stance taken by governments to dissuade people from smoking (and thus cut health-care costs) does impact on firm level behaviour. Smoking ban legislation is an institutional factor impacting and shaping consumption within the tobacco industry, and impacting directly on internationalisation. Further, it is clear that firms without a smoking ban at home are growing more important, and are expanding into developing countries or those countries with low human development.

We subsequently are able to show that firms who invest in non-ban countries are also more likely to invest in developing countries. This suggests that institutions seeking to

[17] The Independent, May 22nd 2015, available at : http://www.independent.co.uk/life-style/health-and-families/health-news/tobacco-companies-file-lawsuits-against-uk-government-over-plain-packaging-laws-10270874.html

influence national CSR (proxied by smoking bans) significantly influence FDI decisions and location decisions. Our findings indicate the need for further research linking FDI, not merely in controversial sectors, but in controversial circumstances, to both local and global debates concerning governance and regulation.

6.1 Limitations

The first question that we must address is the extent to which one can generalise from analysis based on what might be considered an atypical industry. For example, western models of governance rely on dispersed ownership, and the roles of non-executive directors to mitigate extreme behaviour. Such a model does not apply here. Directors emphasise economic over moral or ethical responsibilities (Carroll, 1979, 1991) and ownership concentration is seemingly irrelevant.

In terms of internationalisation, while, as we explain above, it is reasonable to assume that FDI in this sector is for market seeking reasons rather than resource seeking or efficiency seeking. We have however inferred that from the nature of the sector, and the apparent activities based on industry classification codes of affiliates, rather than observing this directly. Thirdly, export information at the firm level is patchy. There is no obligation within many countries financial reporting rules to report exports, and none do so by location[18]. As such, we examine only one part of the internationalisation decision. Finally, there is a trade-off here between data quality, and coverage. For the large western firms, we can in general extract financial information on the foreign affiliates, capturing investment levels, sales volumes etc. However, this information is not available for smaller firms, and the coverage is poor in many developing countries. As such, we have taken the decision to capture as wide a data set as possible, but the measure of FDI as a binary variable we acknowledge is restrictive.

6.2 Implications

Our results support the moves worldwide to implement further anti-smoking legislation. India has moved to ban FDI in this sector, and many countries that we list as "no ban" countries are subsequently enacted anti-smoking legislation (ANR, 2014). China will

[18] In the UK for example larger companies report "earnings from overseas" but this may include profits on currency transactions undertaken abroad, or sales of overseas assets for example.

end smoking in indoor spaces by the end of 2014 (CNN, 2014) and Japan now has restrictions on smoking in some prefectures (regions) (ANR, 2014). In addition, further work is required around firm strategy in this domain. Our model has assumed that FDI in this sector is market seeking. Of course this may not be the case, and recent decisions taken in India to ban FDI must be seen in this light. For example, there are a growing number of tobacco companies among emerging market MNEs who may respond differently to such regulation. We know that in general emerging market MNEs rely much more on CSAs than FSAs to facilitate internationalisation, and as regulation of tobacco in emerging markets still lags behind the developed world, we may see further growth in internationalisation from these countries. Equally, it is well known that emerging market MNEs have different ownership and governance structures from traditional MNEs, and as a result respond differently to institutions and institutional voids, so we may observe different firm level responses to such bans in the future. In the Indian context, the view of national policy makers was that India would be seen as an attractive location for both efficiency seeking FDI and market seeking FDI, leading to lower prices domestically and greater health risks in the future. Our results confirm the wisdom of the decision to ban FDI in this sector in India.

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Table 1: Defining smoking bans.

Ban type	Definition
Complete ban	Smoke-free legislation covering all types of places and institutions.
Strong ban	Smoke-free legislation covering health-care and educational facilities, but with limited exceptions.
Moderate ban	Smoke-free legislation covering health-care and educational facilities, as well as 3, 4, or 5 other places and institutions.
Minimal ban	Smoke-free legislation covering health-care and educational facilities, as well as 1 or 2 other places and institutions.
Comprehensive local legislation	Smoke-free legislation at a sub-national level.
No ban	Complete absence of smoke-free legislation, or absence of smoke-free legislation covering either health-care or educational facilities.

Table 2: Parent firm location and country's smoking ban status.

Parent country of origin	Number of firms	Percentage of sample	Country's ban status in 2009†	Most sold brand of cigarettes – taxes as a % of price (2008) ††
Belgium	6	4.26	Moderate ban	77.43
Bulgaria	19	13.48	Minimal ban	85.44
China	24	17.02	No ban	36.18
Croatia	3	2.13	No ban	60.70
Czech Republic	3	2.13	No ban	82.83
France	2	1.42	Strong ban	80.39
Germany	17	12.06	Local legislation	75.78
Greece	11	7.8	No ban	73.47
India	2	1.42	Local legislation	46.20
Italy	11	7.8	Strong ban	75.17
Japan	1	0.71	No ban	63.06
Jordan	1	0.71	Minimal ban	77.20
Netherlands	6	4.26	Strong ban	73.67
Poland	9	6.38	No ban	93.84
Portugal	2	1.42	Moderate ban	79.60
Romania	1	0.71	Moderate ban	72.37
Spain	11	7.8	Moderate ban	77.35
Sweden	3	2.13	Strong ban	71.85
United Kingdom	2	1.42	Complete ban	76.57
United States	7	4.96	Local legislation	36.57
Total	141	100		

†Source: ChartsBin Statistics Collector Team (2009).
†† Source: World Health Organisation

Table 3: The FDI decision (marginal effects).

VARIABLES	FDI	FDI
ln Sales	-0.291***	-0.286***
	(0.0606)	(0.0598)
ln Sales²	0.0206***	0.0201***
	(0.00339)	(0.00336)
ln Cash flow	0.00141	0.00207
	(0.00541)	(0.00552)
Intangible/Total Assets	-0.0629	-0.241
	(0.379)	(0.382)
Age	0.00348***	0.00407***
	(0.00115)	(0.00120)
Age²	-2.30e-05***	-2.65e-05***
	(6.08e-06)	(6.37e-06)
Number of Directors	0.0195***	0.0204***
	(0.00398)	(0.00399)
Herfindahl	-0.0303	-0.00461
	(0.0567)	(0.0584)
No_Ban_Home	0.0759*	
	(0.0400)	
Tobacco Tax		-0.00261*
		(0.00134)
Observations	912	912
LR (9)	313.818	314.001
Prob> LR	0.000	0.000
Pseudo R²	0.2505	0.2506
Correct predictions	76.75	76.86
Smith-Blundell (χ^2)	0.0298	0.1382
P-value	0.8629	0.7100

Robust standard errors in parentheses *** p<0.01, * p<0.1[19]
The Smith-Blundell statistic reports the appropriate test for endogeneity[20].

[19] Robustness testing: Within this setting we included a number of variables including debt, interest rate coverage, total assets and total employment (both alongside and instead of sales) and measures of productivity. The coefficients reported here are robust to their inclusion, but likelihood ratio tests do not reject their exclusion, jointly or separately, neither do their t values.

[20] We ran various tests for endogeneity using all available instruments for board size, and cannot reject the hypothesis that board size is exogenous. The final possibility is that the imposition of a ban itself is endogenous. For example one could imagine that dominant firms, large employers, those who generate revenue for the exchequer, or exports, may be able to influence policy through lobbying. The tests employed were unable to reject the hypothesis that these variables were exogenous.

Table 4: The decision to invest in locations without smoking bans (marginal effects).

VARIABLES	FDI in no ban	FDI in no ban
ln Sales	-0.267***	-0.201***
	(0.0461)	(0.0453)
ln Sales²	0.0185***	0.0148***
	(0.00279)	(0.00256)
ln Cash flow	-0.00859**	-0.0155***
	(0.00396)	(0.00441)
Intangible/Total Assets	0.330	-0.0294
	(0.258)	(0.262)
Age	0.00262***	0.00241**
	(0.000788)	(0.000968)
Age²	-2.21e-05***	-2.89e-05***
	(3.82e-06)	(6.58e-06)
Number of Directors	0.00535**	0.00890***
	(0.00222)	(0.00296)
Herfindahl	0.0195	-0.0160
	(0.0321)	(0.0366)
No_Ban_Home	0.536***	
	(0.0434)	
Tobacco Tax		-0.00274**
		(0.00107)
Observations	912	912
LR (9)	491.937	312.297
Prob> LR	0.000	0.000
Pseudo R²	0.5100	0.3238
Correct predictions	87.39%	83.22%

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A1: No ban countries in 2009 by HDI ranking.

Low HDI	Medium HDI	High HDI	Very high HDI	Not classified
Afghanistan	Cape Verde	Albania	Barbados	Ant. & Barb.
Angola	China	Armenia	Brunei	Cuba
Bangladesh	Congo, Rep.	Azerbaijan	Czech Rep.	Dominica
Burma	Dom. Rep.	Bahamas	Denmark	Grenada
Burundi	El Salvador	Belarus	Greece	Kiribati
Comoros	Fiji	Belize	Hungary	Lebanon
Congo, DR	Gabon	Chile	Japan	Marsh. Islands
Côte d'Ivoire	Guyana	Costa Rica	Korea, South	Nauru
Ethiopia	Honduras	Croatia	Luxembourg	Palau
Ghana	Kyrgyzstan	Georgia	Monaco	St Kitts & Nev.
Guinea-Biss.	Micronesia	Jamaica	Poland	St Vincent
Haiti	Mongolia	Latvia	Qatar	Samoa
Iraq	Namibia	Macedonia		San Marino
Liberia	Nicaragua	Russia		Somalia
Malawi	Paraguay	Tonga		Tuvalu
Mauritania	Sao Tome	Tunisia		Vanuatu
Nepal	Sol. Islands	Ukraine		
Papua NG	Suriname			
Rwanda	Syria			
Senegal	Tajikistan			
Sierra Leone	Timor-Leste			
Sudan	Uzbekistan			
Tanzania	Vietnam			
Togo				

Source: United Nations (2009). *Human Development Report*. New York

Table A2: Descriptive statistics (overall data).

Variable	Observations	Mean	Std. dev.
FDI	912	0.444	0.497
FDI in No Ban	912	0.221	0.415
ln Sales	912	9.817	2.687
ln Sales²	912	103.574	58.675
Change in Sales	774	0.040	0.706
ln Cash flow	912	4.614	4.590
Intangible/Total Assets	912	0.034	0.094
Age	912	32.093	34.368
Age²	912	2209.821	5633.157
Number of Directors	912	6.803	6.101
Herfindahl	912	0.661	0.380
No_Ban_Home	912	0.334	0.472
Tobacco Tax	912	71.072	16.977

Table A3: FDI in No Ban Countries with the Change in Sales

VARIABLES	FDI in no ban	FDI in no ban
Percentage Change in Sales	0.0374**	0.0368*
	(0.0181)	(0.0196)
ln Cash flow	0.0136***	0.00791**
	(0.00420)	(0.00403)
Intangible/Total Assets	1.338***	1.019***
	(0.234)	(0.193)
Age	0.00164	0.00234**
	(0.00103)	(0.00107)
Age^2	-1.29e-05**	-2.06e-05***
	(5.39e-06)	(6.06e-06)
Number of Directors	0.00919***	0.0125***
	(0.00238)	(0.00273)
Herfindahl	0.0434	0.0616
	(0.0389)	(0.0384)
No_Ban_Home	0.428***	
	(0.0388)	
Tobacco Tax		-0.00569***
		(0.00111)
Observations	774	774
LR (8)	274.788	165.988
Prob> LR	0.000	0.000
Pseudo R^2	0.3311	0.2000
Correct predictions	85.66	82.82%

Robust standard errors in parentheses *** p<0.01, ** p<0.05,

Table A4: Correlation coefficients.

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1	FDI	1.000												
2	FDI in No Ban	0.597	1.000											
3	ln Sales	0.461	0.494	1.000										
4	ln Sales^2	0.466	0.531	0.977	1.000									
5	Percentage Change in Sales	0.0221	0.0606	0.1406	0.1063	1.000								
6	ln Cash flow	0.304	0.238	0.601	0.620	0.0319	1.000							
7	Intangible/Total Assets	0.240	0.386	0.532	0.630	0.0257	0.390	1.000						
8	Age	0.143	-0.013	0.181	0.146	-0.1223	0.168	-0.058	1.000					
9	Age^2	0.090	-0.037	0.135	0.122	-0.0798	0.149	-0.056	0.877	1.000				
10	Number of Directors	0.401	0.314	0.529	0.537	-0.0794	0.447	0.380	0.239	0.158	1.000			
11	Herfindahl	-0.060	-0.137	-0.107	-0.169	0.0816	-0.167	-0.334	0.116	0.051	-0.139	1.000		
12	No_Ban_Home	0.017	0.344	-0.003	-0.018	0.047	-0.207	-0.050	-0.082	-0.022	-0.069	-0.015	1.000	
13	Tobacco Tax	-0.110	-0.220	-0.215	-0.235	-0.0525	0.089	-0.199	0.109	-0.053	-0.029	0.271	-0.340	1.000